From "Wetland Program Development Grants (WPDGs) Case Studies"
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Rhode Island Department of Environmental Management (RIDEM): *Developing methods to identify, prioritize and assess functionality of freshwater wetlands in Rhode Island*

Introduction

The Rhode Island Department of Environmental Management (RIDEM) and Coastal Resources Management Council (CRMC) share responsibilities for protection, restoration and management of the State's freshwater and coastal wetlands. For the majority of the State, RIDEM serves as the point of contact for freshwater wetland regulation and policy development. Wetland program development in Rhode Island is primarily guided by the EPA recommendations for building a comprehensive wetland program, the RIDEM led Wetland Task Force Final Report (2001) and the Coastal Resource Management Program (1996). RIDEM has completed regulatory and non-regulatory WPDG projects with partners including the University of Rhode Island-Department of Natural Resource Science (URI NRS) and the New England Interstate Water Pollution Control Commission (NEIWPC).

The RI Habitat Restoration Team, formed in 1992 as a component of the United States Fish and Wildlife Service (USFWS) Partners for Wildlife program, recognized the need of a plan for coordinated habitat restoration in RI, with early attention given to the coastal habitats. The WPDG program facilitated that effort by supporting two coastal wetland restoration-planning projects, "Coastal Wetland Reference Sites in Narragansett Bay" and "Narragansett Bay Coastal Wetland Restoration Analysis". However in 1999, RIDEM began to shift focus to explore freshwater wetland restoration opportunities.

WPDG Activity

RIDEM undertook a multi-phased project with the URI NRS as a preliminary step for developing a statewide proactive restoration strategy for freshwater wetlands. This undertaking was organized into two phases with complementary objectives.

The primary objective of Phase 1 is summarized by the project and report title, *"Development of a Statewide Freshwater Wetland Restoration Strategy: Site Identification and Prioritization Methods"* (Miller and Golet, 2001). The researchers considered many region-specific data sources and methods to identify and prioritize potential restoration sites. The methods were tested in a 3.5 x 3.5-mile study area in the Woonasquatucket River watershed.

Wetland Identification

For ***destroyed*** wetlands, a time-lapse approach comparing 1939 aerial photography, the State's oldest data source, with 1988 delineated aerial photography was determined to be the most effective method for identification.

For ***degraded*** wetlands, examination of the 1988 delineated wetland photographs with the most recent digital orthophotography proved to be the most effective method. A standard form was developed to take nominations from stakeholders for sites with impact types that could not be identified remotely. The nomination forms included guidelines for identifying restoration sites in the field, a helpful tool for local partners.

Prioritizing Restoration

The second focus of Phase 1 was development of a method to prioritize potential wetland restoration sites once identified. Methods developed were based on the type of wetland impact (destroyed or degraded) and a functional assessment method to determine what functions (flood abatement, water quality improvement, wildlife habitat, fish passage and heritage) could be improved if the wetland were restored. For degraded wetlands, unique prioritization methods were developed based on the type of wetland impact (e.g. removal of upland buffer vegetation, impedance of surface flow, stream channelization, invasive species, etc.). The wetland impact identified had a significant bearing on the potential for restoration, given differing methods for restoration and corresponding costs.

Under Phase 2, URI NRS, RIDEM, the Woonasquatucket Watershed Council and the planning officials from the six watershed cities and towns tested the methods developed in Phase 1 in a demonstration study funded by another WPDG. The technical framework developed in Phase 1 was used to develop a comprehensive watershed-based freshwater wetland restoration plan.

Demonstration

During Phase 2 the scientific team focused on two wetland impact types where most functional benefits could be restored; these impacts were the filling of wetlands and removal of adjacent upland buffer vegetation. Seventy-seven potential wetland restoration sites (fill sites) were identified across the Woonasquatucket watershed. Eleven of the sites were publicly owned and 66 sites were privately owned. Landowners were identified for all the wetland fill sites and for the highest-ranking upland vegetation removal sites. A restoration feasibility analysis including field visits was completed for all publicly owned sites.

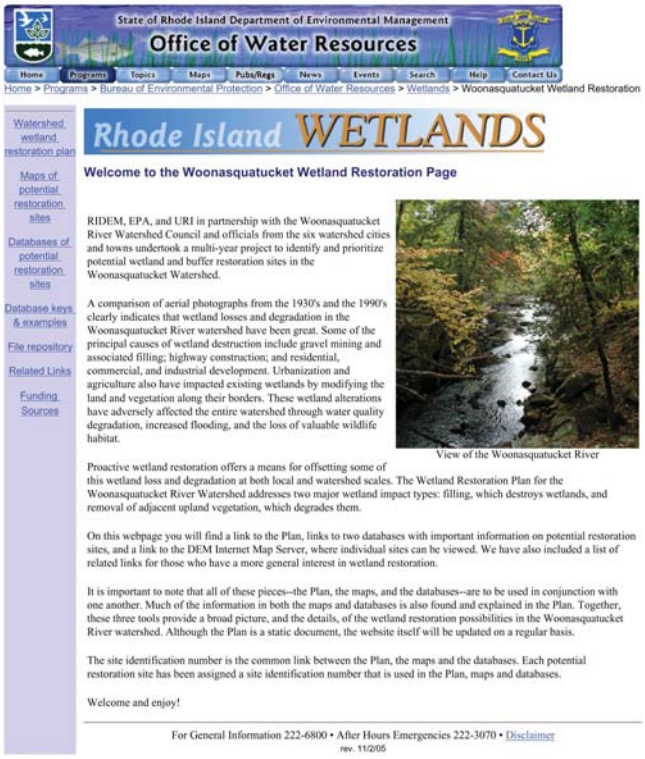
RIDEM and NEIWPCC trained watershed and municipal officials in the use of these tools and the Woonasquatucket Watershed Council and partners have assumed a leadership role in the implementation of the Plan. In September 2005, volunteers from the Smithfield Conservation Commission joined with the Woonasquatucket Watershed Council and the Smithfield Department of Public Works to complete restoration planting at one of the sites.

Current Work and Future Plans

RIDEM and the Woonasquatucket River Watershed Council will continue work toward the next project phase through a project titled *"Woonasquatucket Restoration Project:*

Demonstration of Next Steps." Through the leadership of the RI Habitat Restoration Team, RIDEM is preparing the freshwater wetland section of the statewide habitat restoration strategy, relying heavily on the results and lessons learned from WPDG projects.

RIDEM was awarded three-year Environmental Outcome Wetland Demonstration Pilot (WDP) grants (one Regulatory, one non-Regulatory) in FY05 to undertake an ambitious wetland work plan. Efforts will be ongoing toward establishing a baseline dataset for wetland resources in Rhode Island by producing wetland profiles for the State's watersheds, refining a rapid assessment method (RAM) and demonstrating the use of the RAM at selected wetland sites subject to the influences of groundwater withdrawal. RIDEM will also continue to build on its outreach strategy by organizing training for consultants and local officials. Efforts to update and distribute outreach materials will continue with plans to develop a wetland restoration kit for landowners.



For more information about other wetland protection activities in Rhode Island and/or a copy of "The Wetland Restoration Plan for the Woonasquatucket River Watershed" with an associated GIS coverage map, please visit the Rhode Island Department of Environmental Management (RIDEM) website (http://www.dem.ri.gov/programs/benviron/water/wetlands/wetplan.htm.) The website, as seen above, was developed with the assistance of NEIWPCC and URI NRS.

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